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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/776,291	02/12/2004	Youichi Ohsawa	0171-1046P	2846

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EXAMINER	
CHU, JOHN S Y	

ART UNIT	PAPER NUMBER
1752	

DATE MAILED: 12/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/776,291	OHSAWA	
	Examiner	Art Unit	
	John S. Chu	1752	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *2* is/are allowed.

6)☒ Claim(s) *1 and 3-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2/12/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This Office action is in response to the application filed February 12, 2004.

Double Patenting

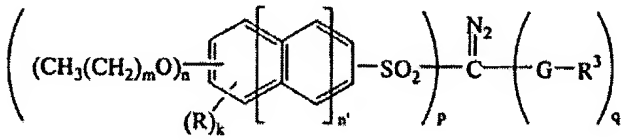
1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1, 3-15 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 4-15 of U.S. Patent No. 6,689,530. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the overlapping scope for the aromatic ring in the claimed invention. The following structures as shown below:

1. A sulfonyldiazomethane compound having the following general formula (1):

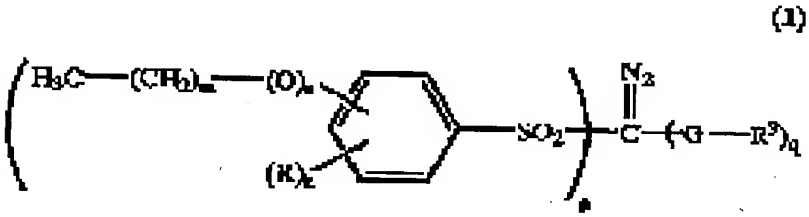


(1)

wherein R is independently hydrogen or a substituted or unsubstituted straight, branched or cyclic alkyl or alkoxy group of 1 to 4 carbon atoms, G is SO_2 or CO, R^3 is a substituted or unsubstituted straight, branched or cyclic alkyl group of 1 to 10 carbon atoms or a substituted or unsubstituted aryl group of 6 to 14 carbon atoms, p is 1 or 2, q is 0 or 1, satisfying p+q = 2, n is 2 or 3, n' is 0 or 1, m is independently an integer of 3 to 11, and k is an integer of 0 to 4.

U.S. Patent 6,689,530 claims the following in claim 1:

1. A sulfonyldiazomethane compound having the following general formula (1):



(1)

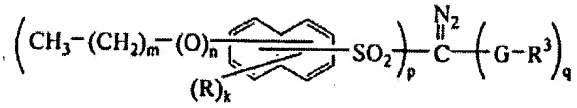
wherein R is independently hydrogen or a substituted or unsubstituted, straight, branched or cyclic alkyl or alkoxy group of 1 to 4 carbon atoms, G is SO_2 or CO, R^3 is a substituted or unsubstituted, straight, branched or cyclic alkyl group of 1 to 10 carbon atoms or a substituted or unsubstituted aryl group of 6 to 14 carbon atoms, p is 1 or 2, q is 0 or 1, satisfying p+q=2, n is 0 or 1, m is an integer of 3 to 11, and k is an integer of 0 to 4.

The examiner notes that when n' =0 in formula (1) of 10/776, 291 then a benzene compound is recited, which upon further review the compound in 10/776,291 anticipates the claimed sulfonyldiazomethane of U.S. Patent 6,689,530. Because anticipation is the epitome of obviousness, the examiner rejects the claims under the judicially created doctrine of obviousness-type double patenting because though the claims are not identical, they are overlapping and obvious over one another.

It would have been *prima facie* obvious to one of ordinary skill in the art of diazomethane to duplicate the compound of 10/776,291 with the reasonable expectation of same or similar results as the compound in U.S. Patent 6,689,530 when used in chemically amplified resist composition to give improved resist patterns and resolution.

3. Claims 1, 3-15 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1,3,5,7,9-18 of copending Application No. 10/636,541. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed invention is drawn to the following diazomethane, which is used in chemical amplification resist composition and method for forming a pattern using said resist composition:

1. A sulfonyldiazomethane compound having the following general formula (1):

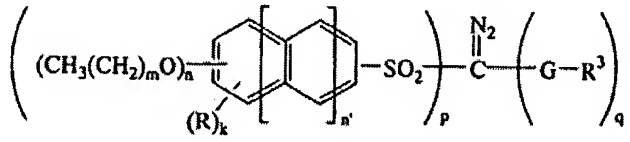


(1)

wherein R is independently hydrogen or a substituted or unsubstituted straight, branched or cyclic alkyl or alkoxy group of 1 to 4 carbon atoms, G is SO_2 or CO, R^3 is a substituted or unsubstituted straight, branched or cyclic alkyl group of 1 to 10 carbon atoms or a substituted or unsubstituted aryl group of 6 to 14 carbon atoms, p is 1 or 2, q is 0 or 1, satisfying p+q = 2, n is 0 or 1, m is an integer of 3 to 11, and k is an integer of 0 to 6.

Claim 1 in copending 10/776,291 claims the following:

1. A sulfonyldiazomethane compound having the following general formula (1):



(1)

wherein R is independently hydrogen or a substituted or unsubstituted straight, branched or cyclic alkyl or alkoxy group of 1 to 4 carbon atoms, G is SO_2 or CO, R^3 is a substituted or unsubstituted straight, branched or cyclic alkyl group of 1 to 10 carbon atoms or a substituted or unsubstituted aryl group of 6 to 14 carbon atoms, p is 1 or 2, q is 0 or 1, satisfying p+q = 2, n is 2 or 3, n' is 0 or 1, m is independently an integer of 3 to 11, and k is an integer of 0 to 4.

The examiner notes that when n' =1 in formula (1) of 10/776, 291 then a naphthalene compound is recited. Upon further review the compound in 10/776,291 anticipates the claimed sulfonyldiazomethane of 10/636,541, wherein the same substituted groups are on the naphthalene ring. Because anticipation is the epitome of obviousness, the examiner rejects the

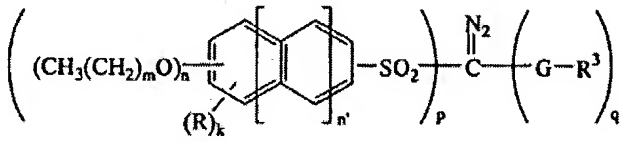
claims under the judicially created doctrine of obviousness-type double patenting because though the claims are not identical, they are overlapping and obvious over one another.

It would have been *prima facie* obvious to one of ordinary skill in the art of diazomethane to duplicate the compound of 10/776,591 as a compound in 10/636,541 with the reasonable expectation of same or similar results when used in chemically amplified resist composition to give improved resist patterns and resolution.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

4. Claims 1, 3-15 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 4-15 of U.S. Patent application publication 2004/0167322. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the overlapping scope for the aromatic ring in the claimed invention. The following structures as shown below for the claimed application 10/766,291;

1. A sulfonyldiazomethane compound having the following general formula (1):



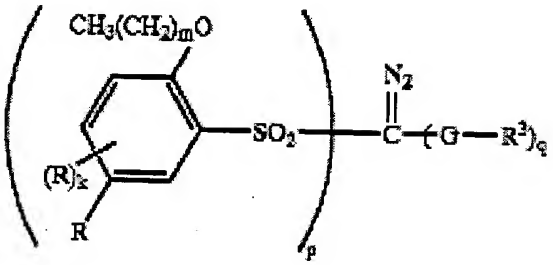
(1)

wherein R is independently hydrogen or a substituted or unsubstituted straight, branched or cyclic alkyl or alkoxy group of 1 to 4 carbon atoms, G is SO_2 or CO, R^3 is a substituted or unsubstituted straight, branched or cyclic alkyl group of 1 to 10 carbon atoms or a substituted or unsubstituted aryl group of 6 to 14 carbon atoms, p is 1 or 2, q is 0 or 1, satisfying p+q = 2, n is 2 or 3, n' is 0 or 1, m is independently an integer of 3 to 11, and k is an integer of 0 to 4.

and U.S. Patent application publication claims the following in claim 1:

1. A sulfonyldiazomethane compound having the following general formula (1):

(1)



wherein R is each independently a substituted or unsubstituted straight, branched or cyclic alkyl group of 1 to 4 carbon atoms, G is SO_2 or CO, R^3 is a substituted or unsubstituted straight, branched or cyclic alkyl group of 1 to 10 carbon atoms or a substituted or unsubstituted aryl group of 6 to 14 carbon atoms, p is 1 or 2, q is 0 or 1, satisfying p+q=2, m is an integer of 3 to 11, and k is an integer of 0 to 4, with the proviso that in the event k is at least 1, at least one of R associated with k may bond with the R at the 4-position to form a cyclic structure with the carbon atoms on the benzene ring to which these R's are attached, and then, these two R's bond together to form an alkylene group of 3 to 4 carbon atoms.

The examiner notes that when n' =0 in formula (1) of 10/776, 291 then a benzene compound is recited, which upon further review the compound in 10/776,291 anticipates the claimed sulfonyldiazomethane of U.S. Patent application publication 2004/0167322. Because anticipation is the epitome of obviousness, the examiner rejects the claims under the judicially created doctrine of obviousness-type double patenting because though the claims are not identical, they are overlapping and obvious over one another.

It would have been *prima facie* obvious to one of ordinary skill in the art of diazomethane to duplicate the compound of 10/776,291 with the reasonable expectation of same or similar

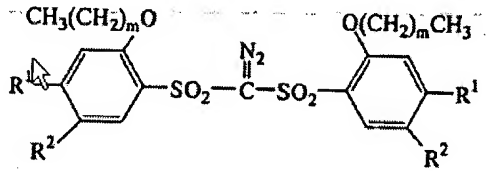
results as the compound in U.S. Patent application publication 2004/0167322 when used in chemically amplified resist composition to give improved resist patterns and resolution.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

5. Claim 2 is allowed.

None of the references of record disclose the specific diazomethane compound of the following compound:

2. A sulfonyldiazomethane compound having the following general formula (1a):



(1a)

wherein R^1 and R^2 are each independently R or $CH_3(CH_2)_mO$, excluding the combination that both R^1 and R^2 are R at the same time, R is hydrogen or a substituted or unsubstituted straight, branched or cyclic alkyl or alkoxy group of 1 to 4 carbon atoms, and m is an integer of 3 to 11.

The compound above requires at least one of R^1 or R^2 to be an alkoxy as defined above for R, thus giving two alkoxy groups above. None of the references teach the claimed scope.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

URANO et al '970 and '976 are cited to disclose the following resist material comprising a diazomethane having a listed substituted group of a 1-5 carbon alkoxy among a list of other groups. In URANO et al '970 the diazomethanes having the substituted groups are disclosed in

column 6, line 60 – column 7, line 27, however the disclosed examples in column 20, lines 37-48 fail to disclose an alkoxy substituted diazomethane, let alone a diazomethane having a butoxy substituted group (4 carbons atoms; m=3).

PAWLOWSKI et al '641 and 166 are cited to disclose diazomethanes having a methoxyphenyl group on the diazomethane compound. Here the references lack the recited side group as claimed wherein the short alkoxy group is a butoxy group.

SEKI et al to the same assignee, Shin-etsu Chemical Co. Ltd disclose resist compositions comprising diazomethanes, however lack the claimed alkoxy group.

NITTA et al disclose diazomethanes in resist compositions having acid-labile group attached to cyclic alkyl groups, which give high sensitivity to the resist composition.

OHSAWA et al '653 is the published application to U.S. Patent 6,689,530 and has been used in a rejection above in paragraph 2.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Chu whose telephone number is (571) 272-1329. The examiner can normally be reached on Monday - Friday from 9:30 am to 6:00 pm.

The fax phone number for the USPTO is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-1700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PMR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

John S. Chu
Primary Examiner, Group 1700

J.Chu
December 11, 2004